

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.  
PCT/EP2004/010982

International filing date (day/month/year)  
30.09.2004

Priority date (day/month/year)  
03.10.2003

International Patent Classification (IPC) or both national classification and IPC  
C10G45/08, B01J37/02, B01J23/88, B01J23/882, B01J23/883, B01J23/888, B01J23/94, B01J38/60, B01J38/62

Applicant  
ALBEMARLE NETHERLANDS B.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

3-10-2003  
22  
3-24-2005

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

10/374228

International application No.  
PCT/EP2004/010982

APPROVED 10 MAR 2006

**Box No. I Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. ☐ It has not been possible to consider the validity of the priority claim because a copy of the priority document was not available to the ISA at the time that the search was conducted (Rule 17.1). This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

4. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-16,18
	No: Claims	17,19
Inventive step (IS)	Yes: Claims	1-16,18
	No: Claims	17,19
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

PCT/EP2004/010982

IAP20 Rec'd PCT/PTO 31 MAR 2006

**Re Item V.**

1 The following documents are referred to in this communication:

D1 : EP 0 601 722 A (SUMITOMO METAL MINING CO) 15 June 1994 (1994-06-15)

2 INDEPENDENT CLAIMS 17 AND 19

2.1 The document D1 discloses a hydrotreating catalyst comprising a Group VIB metal oxide and a Group VIII metal oxide, which catalyst additionally comprises an acid and an organic additive such as diethyleneglycol or other polyols (See Example 1 and §2 of p. 6 of D1).

2.2 The document D1 further discloses the use of this catalyst for hydrotreating a hydrocarbon feed after presulfidation (See Example 1 of D1).

2.3 The subject-matter of present independent claims 17 and 19 is therefore not new (Article 33(1) and (2) PCT).

3 INDEPENDENT CLAIM 1

3.1 Document D1, which is considered to represent the most relevant state of the art, discloses a process for preparing a hydrotreating catalyst comprising a Group VIB metal oxide and a Group VIII metal oxide, which catalyst additionally comprises an acid and an organic additive such as diethyleneglycol or other polyols (See Example 1 and §2 of p. 6 of D1).

From this, the subject-matter of independent claim 1 differs in that the catalyst comprising a Group VIB metal oxide and a Group VIII metal oxide is activated by contact with an acid and an organic additive in a further step.

3.1.1 The subject-matter of claim 1 is therefore novel (Article 33(2) PCT)  
The problem to be solved by the present invention may be regarded as how to optimize a catalyst system for the hydrotreating of hydrocarbons.

3.1.2 The solution to this problem proposed in claim 1 of the present application is

considered as involving an inventive step (Article 33(3) PCT) because no document of the prior art on file discloses the activation process nor gives a hint to its effect, as exemplified in example 8 of page 24 of present description.

- 3.1.3 Claims 2-15 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

#### **4 INDEPENDENT CLAIM 16**

- 4.1 Independent claim 16 discloses a catalyst obtained by a process that is novel and inventive. A similar reasoning as in point 3 above leads to the conclusion that this catalyst is novel and inventive.
- 4.2 Claim 18 is dependent on claim 16 and as such also meets the requirements of the PCT with respect to novelty and inventive step.

#### **Re Item VIII.**

Claim 19 mentions a catalyst according to claim 10, whereas the subject-matter of claim 10 is a process.

Claim 12 refers to "any of the preceding claims" but relates only to an organic acid, whereas claim 11 relates to an inorganic acid.